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Notice of Allowability

Application No.

10/617,932

Examiner

Thu Ha T. Nguyen

Applicant(s)

BOYD ET AL.

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on 7/11/03.
2. ☒ The allowed claim(s) is/are 1, 3-8, 10-15, and 17-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 7/11/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


THU HA NGUYEN
PRIMARY EXAMINER

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Applicants' Representative, Mr. Kurt P. Goudy (Reg. No. 52,954), on December 06, 2007.

3. The application has been amended as follow:

In the claims:

1. (Currently amended) A method for a first peer and a second peer to share a plurality of data transfers to one or more storage devices, said first peer and said second peer each having access to said data transfers, where said method comprises the steps of:

1.1. said first peer transferring a first number of data transfers to said one or more storage devices;

1.2. said second peer transferring a second number of data transfers to said one or more storage devices;

1.3. in response to said first peer completing said transfer of said first number of data transfers to said one or more storage devices, said first peer assisting said second peer with said second number of data transfers;

1.4. in response to said second peer completing said transfer of said second number of data transfers to said one or more storage devices, said second peer assisting said first peer with said first number of data transfers; and

1.5. in response to said first peer and said second peer not completing all data transfers, returning to step 1.3;

wherein step 1.3 further comprises the steps of:

2.1. determining if said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices;

2.2. in response to determining that said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices;

2.2.1. assigning a portion of said second number of data transfers from said second peer to said first peer as said first number of data transfers;

2.2.2. adjusting a first peer ratio and a second peer ratio; and

2.2.3. said first peer transferring said portion of said second number of data transfers to said one or more storage devices.

2. (Cancelled).

3. (Original) The method of claim 1, wherein step 1.4 further comprises the steps of:

3.1. determining if said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices;

3.2. in response to determining that said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices:

3.2.1. adjusting a first peer ratio and a second peer ratio;

3.2.2. assigning a portion of said first number of data transfers from said first peer to said second peer as said second number of data transfers; and

3.2.3. said second peer transferring said portion of said first number of data transfers to said one or more storage devices.

4. (Original) The method of claim 2 1, wherein step 2.1 further comprises the steps of:

4.1. determining a first peer ratio and a second peer ratio;

4.2. determining a portion of second number of transfers that is equal to said second peer ratio multiplied by a remaining second number of transfers;

4.3. in response to said portion of second number of transfers being greater than a second peer minimum number of transfers, said second peer sending an "assistance needed" message to said first peer; and

4.4. in response to said portion of second number of transfers being less than or equal to said second peer minimum number of transfers, said second peer sending a "no assistance needed" message to said first peer.

5. (Original) The method of claim 3, wherein step 3.1 further comprises the steps of:

5.1. determining a first peer ratio and a second peer ratio;

5.2. determining a portion of first number of transfers that is equal to said first peer ratio multiplied by a remaining first number of transfers;

5.3. in response to said portion of first number of transfers being greater than a first peer minimum number of transfers, said first peer sending an "assistance needed" message to said second peer; and

5.4. in response to said portion of first number of transfers being less than or equal to said first peer minimum number of transfers, said first peer sending a "no assistance needed" message to said second peer.

6. (Original) The method of claim 4, wherein step 4.1 further comprises:

6.1. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 1.3, increasing said second peer ratio by a second increment; and

6.2. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 1.4, decreasing said first peer ratio by a first increment.

7. (Original) The method of claim 5, wherein step 5.1 further comprises:

7.1. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 1.4, increasing said first peer ratio by a first increment;

7.2. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 1.3, decreasing said second peer ratio by a second increment.

8. (Currently amended) An article of manufacture comprising a data storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform method steps for a first peer and a second peer to share a plurality of data transfers to one or more storage devices, said first peer and said second peer each having access to said data transfers, said method steps comprising:

8.1. said first peer transferring a first number of data transfers to said one or more storage devices;

8.2. said second peer transferring a second number of data transfers to said one or more storage devices;

8.3. in response to said first peer completing said transfer of said first number of data transfers to said one or more storage devices, said first peer assisting said second peer with said second number of data transfers;

8.4. in response to said second peer completing said transfer of said second number of data transfers to said one or more storage devices, said second peer assisting said first peer with said first number of data transfers; and

8.5. in response to said first peer and said second peer not completing all data transfers, returning to step 8.3;

wherein step 8.3 further comprises the steps of:

9.1. determining if said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices;

9.2. in response to determining that said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices:

9.2.1. assigning a portion of said second number of data transfers from said second peer to said first peer as said first number of data transfers;

9.2.2. adjusting a first peer ratio and a second peer ratio; and

9.2.3. said first peer transferring said portion of said second number of data transfers to said one or more storage devices.

9. (Cancelled).

10. (Original) The article of manufacture of claim 8, wherein step 8.4 further comprises the steps of:

10.1. determining if said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices;

10.2. in response to determining that said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices:

10.2.1. adjusting a first peer ratio and a second peer ratio;

10.2.2. assigning a portion of said first number of data transfers from said first peer to said second peer as said second number of data transfers; and

10.2.3. said second peer transferring said portion of said first number of data transfers to said one or more storage devices.

11. (Original) The article of manufacture of claim 9 8, wherein step 9.1 further comprises the steps of:

11.1. determining a first peer ratio and a second peer ratio;

11.2. determining a portion of second number of transfers that is equal to said second peer ratio multiplied by a remaining second number of transfers;

11.3. in response to said portion of second number of transfers being greater than a second peer minimum number of transfers, said second peer sending an "assistance needed" message to said first peer; and

11.4. in response to said portion of second number of transfers being less than or equal to said second peer minimum number of transfers, said second peer sending a "no assistance needed" message to said first peer.

12. (Original) The article of manufacture of claim 10, wherein step 10.1 further comprises the steps of:

12.1. determining a first peer ratio and a second peer ratio;

12.2. determining a portion of first number of transfers that is equal to said first peer ratio multiplied by a remaining first number of transfers;

12.3. in response to said portion of first number of transfers being greater than a first peer minimum number of transfers, said first peer sending an "assistance needed" message to said second peer; and

12.4. in response to said portion of first number of transfers being less than or equal to said first peer minimum number of transfers, said first peer sending a "no assistance needed" message to said second peer.

13. (Original) The article of manufacture of claim 11, wherein step 11.3 further comprises the steps of:

13.1. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 8.3, increasing said second peer ratio by a second increment; and

13.2. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 8.4, decreasing said first peer ratio by a first increment.

14. (Original) The article of manufacture of claim 12, wherein step 12.1 further comprises the steps of:

14.1. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 8.4, increasing said first peer ratio by a first increment;

14.2. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 8.3, decreasing said second peer ratio by a second increment.

15. (Currently amended) A data storage system comprising:

one or more storage devices;

a storage management device for providing access to said one or more storage devices;

a first peer for transferring data to said one or more storage devices;

a second peer for transferring data to said one or more storage devices, wherein said first peer and said second peer are programmed to perform method steps for said first peer and said second peer to share a plurality of data transfers to said one or more storage devices, said first peer and said second peer each having access to said data transfers, comprising the steps of:

15.1. said first peer transferring a first number of data transfers to said one or more storage devices;

15.2. said second peer transferring a second number of data transfers to said one or more storage devices;

15.3. in response to said first peer completing said transfer of said first number of data transfers to said one or more storage devices, said first peer assisting said second peer with said second number of data transfers;

15.4. in response to said second peer completing said transfer of said second number of data transfers to said one or more storage devices, said second peer assisting said first peer with said first number of data transfers; and

15.5. in response to said first peer and said second peer not completing all data transfers, returning to step 15.3;

wherein step 15.3 further comprises the steps of:

16.1. determining if said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices;

16.2. in response to determining that said second peer needs assistance to transfer said second number of data transfers to said one or more storage devices:

16.2.1. assigning a portion of said second number of data transfers from said second peer to said first peer as said first number of data transfers;

16.2.2. adjusting a first peer ratio and a second peer ratio; and 16.2.3. said first peer transferring said portion of said second number of data transfers to said one or more storage devices.

16. (Cancelled).

17. (Original) The system of claim 15, wherein step 15.4 further comprises the steps of:

17.1. determining if said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices;

17.2. in response to determining that said first peer needs assistance to transfer said first number of data transfers to said one or more storage devices:

17.2.1. adjusting a first peer ratio and a second peer ratio;

17.2.2. assigning a portion of said first number of data transfers from said first peer to said second peer as said second number of data transfers; and 17.2.3. said second peer transferring said portion of said first number of data transfers to said one or more storage devices.

18. (Original) The system of claim 46 15, wherein step 16.1 further comprises the steps of:

18.1. determining a first peer ratio and a second peer ratio;

18.2. determining a portion of second number of transfers that is equal to said second peer ratio multiplied by a remaining second number of transfers;

18.3. in response to said portion of second number of transfers being greater than a second peer minimum number of transfers, said second peer sending an "assistance needed" message to said first peer; and

18.4. in response to said portion of second number of transfers being less than or equal to said second peer minimum number of transfers, said second peer sending a "no assistance needed" message to said first peer.

19. (Original) The system of claim 17, wherein step 17.1 further comprises the steps of:

19.1. determining a first peer ratio and a second peer ratio;

19.2. determining a portion of first number of transfers that is equal to said first peer ratio multiplied by a remaining first number of transfers;

19.3. in response to said portion of first number of transfers being greater than a first peer minimum number of transfers, said first peer sending an "assistance needed" message to said second peer; and

19.4. in response to said portion of first number of transfers being less than or equal to said first peer minimum number of transfers, said first peer sending a "no assistance needed" message to said second peer.

20. (Original) The system of claim 18, wherein step 18.1 further comprises:

20.1. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 15.3, increasing said second peer ratio by a second increment; and

20.2. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 15.4, decreasing said first peer ratio by a first increment.

21. (Original) The system of claim 19, wherein step 19.1 further comprises:

21.1. in response to determining that said second peer assisted said first peer with said first number of data transfers at the previous execution of step 15.4, increasing said first peer ratio by a first increment;

21.2. in response to determining that said first peer assisted said second peer with said second number of data transfers at the previous execution of step 15.3, decreasing said second peer ratio by a second increment.

Reasons for Allowance

4. Claims 1, 3-8, 10-15 and 17-21 are allowed.
5. Claims 2, 9 and 16 are cancelled without prejudice.
6. The following is an examiner's statement of reasons for allowance:

The examiner has found that the prior art of record does not appear to teach or suggest or render obvious the claimed limitations in combination with the specific added limitations as recited in independent claims 1, 8, 16 and 15 and subsequent dependent claims. The prior art of record fails to teach or suggest a system and method for a first peer and second peer to share a plurality of data transfers to one or more storage devices wherein the first and second peer transferring a first and second number of data transfers to the one or more storage devices, in response to the first peer completing the transferring of the first number pf data transfers, the first peer assisting the second peer transferring the second number of data transfers and in response to the second peer completing the transferring of the second number of data transfers, the second peer assisting the first peer transferring the first data transfers by determining if the second peer needs assisting to transfer the second number of data transfer to one or more storage devices, if yes, assigning a portion of the second number of data transfers from the second peer to the first peer as the first number of data transfers, adjusting a

first and second peer ratio, the first peer transferring the portion of the second number of data transfers to one or more storage devices and repeat the process if the first and second peer not completing all data transfers.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess, can be reached at (571) 272-3949.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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THU HA NGUYEN
PRIMARY EXAMINER

December 9, 2007